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JENSEN'S INEQUALITIES WITH MULTIPLE VARIABLES ON TIME SCALES

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Abstract. The Jensen inequality is of great interest in differential and difference equations, and other areas of mathematics. The purpose of this paper is to generalize the Jensen inequality to more general cases on time scales as follows:

$$F\left(\frac{\int_a^b |h(t)|g_1(t)\Delta t}{\int_a^b |h(t)|\Delta t},\cdots,\frac{\int_a^b |h(t)|g_n(t)\Delta t}{\int_a^b |h(t)|\Delta t}\right)\leqslant\frac{\int_a^b |h(t)|F(g_1(t),\cdots,g_n(t))\Delta t}{\int_a^b |h(t)|\Delta t}.$$

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